Review:

- types of hormones
- glands and their hormones
- hormones of the pituitary gland
- negative and positive feedback loops

Regulation of Blood Sugar

- this a negative feedback loop controlled by two antagonistic hormones
- insulin converts glucose into glycogen and lowers blood sugar
- glucagon converts stored glycogen into glucose causing an increase in blood sugar
- regulation of blood sugar follows a number of steps
Step 1: Low levels of blood sugar stimulate the secretion of glucagon

Step 2: Increased glucagon causes stored glycogen in the liver to be converted into glucose for release into the blood stream

Step 3: As blood sugar levels rise the glucagon stops but high blood sugar levels result in the release of insulin

Step 4: Increased insulin levels cause the intake of glucose into muscle cells and convert excess glucose into glycogen for storage in the liver

Step 5: When blood sugar levels drop the cycle starts again.
Disorders of the Pancreas

a. **Type 1 Diabetes (Diabetes Mellitus)**
   - known as juvenile or insulin dependent diabetes (occurs in people under 20)
   - cause by lack of insulin production in the pancreas
   - results in high levels of sugar (glucose) in the blood
   - symptoms include fatigue, thirst, frequent urination, possible blindness
   - treatments include insulin injection (for life)

b. **Type 2 Diabetes (Adult onset diabetes)**
   - occurs in people over 40 years old
   - insulin is produced by the pancreas but cells do not recognize it
   - cells do not use the sugar found in the blood
   - treatment includes a strict control of carbohydrate intake to reduce the amount of blood sugar in the blood
Disorders of the Endocrine System

- see sheet provided

1. Dwarfism:

2. Giantism:
3. Hyperthyroidism:

4. Hypothyroidism:
5. Diabetes Mellitus:

Readings

Pages 427 - 440

(Be sure to read section on Banting and Best on page 439)
Review:
Text: pages 420 - 446
Questions: pg. 447, #'s 2,5,6,8,9,10,11,17,20
        pg.452, #'s 37,52,53